

REMARKS

Claim Rejections Under 35 U.S.C. § 103

Claims 1, and 3-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patents 5,389,696 ("Dempsey") in view of 5,500,176 ("Parks"), or 5,670,553 or 5,993,528 ("Mackey"), and further in view of 5,916,939 or 5,852,107, ("Gillis"). This ground of rejection is respectfully traversed.

In the Office action, the Examiner cites to Dempsey as disclosing an internal mold release agent comprising fatty polyesters and that is utilized with a polysiloxane surfactant that corresponds to that of the Applicant's claim. Applicant's claim 1 calls for a poly(dimethylsiloxane)-*polyoxyethylene* surfactant that has the following formula: $(\text{CH}_3)_3\text{Si}-\text{O}-[(\text{CH}_3)_2\text{Si}-\text{O}]_n-[\text{CH}_2-\text{Si}(\text{R})-\text{O}]_m-\text{Si}(\text{CH}_3)_3$, wherein $\text{R} = -(\text{CH}_2)_3-\text{O}-[\text{EO}]_x-\text{R}'$, R' is H, C_1 to C_{20} alkyl, or C_6 to C_{25} aryl, x is a number from greater than 1 up to 24, m is a number from 1 to 25, and n is a number from 0 to 100. Thus, only ethylene oxide, and not propylene oxide, is present in the claimed surfactant.

In contrast, Dempsey describes his foam stabilizers as having a copolymer of ethylene oxide and propylene oxide attached to a polydimethyl siloxane radical. Column 8, lines 9-17. It has not been found where the Examiner has provided evidence that, at the time embodiments of the present invention were made, one of ordinary skill in the art would have questioned the accuracy of Dempsey's description. Without questioning the accuracy of Dempsey's description, it is respectfully submitted that it would not be obvious to one of ordinary skill in the art to do what the Applicants have done. Applicants found, however, that using certain amounts of certain kinds of polydimethylsiloxanes in a reaction system for producing a polymer provided a surprisingly high number of consecutive releases—greater than 200. This type of release activity was not observed in any of the cited references. Taken together, it is respectfully submitted that the Examiner has not established *prima facie* obviousness and the ground of rejection should be withdrawn.

That the Applicants include certain amounts of certain kinds of a poly(dimethylsiloxane) surfactant in their reaction system is not trivial. For example, Applicants found that certain amounts of poly(dimethylsiloxane) surfactants that *include only EO* produce superior release results. This is exemplified by each of examples 3, 4, and 7 of the present application. In these examples a high EO, non-PO poly(dimethylsiloxane) surfactant was used such that there were at

least 0.0058 EO moles from the surfactant per 100 grams of total polymer. Surprisingly, each of these examples provided greater than 200 consecutive releases of molded parts. In contrast, those examples that employed a PO-containing surfactant, such as comparatives 1 and 2 and examples 8-10, did not exhibit such results. This is true even though examples 8 and 9 had a greater amount of surfactant used and more moles EO from the surfactant/gram of total polymer than examples 3, 4, and 7. Thus, merely using more of a surfactant that includes EO and PO, and merely having a higher EO content from surfactant/100 grams of total polymer does not produce the same results as those obtained with the EO only surfactant. In fact, in example 10 the same EO, PO-containing surfactant that was used in comparative examples 1 and 2 and example 9 was used in combination with the EO only containing surfactant of examples 3 and 4. Interestingly, the number of consecutive releases observed in example 10 was less than 100. Thus, the presence of a PO-containing surfactant appears to reduce the effectiveness of the EO only surfactant.

Furthermore, the results provided in the present specification also show that the surfactant must provide a certain amount of EO/100 grams of total polymer to obtain a surprisingly high number of releases. For example, none of examples 1, 2, 5, and 6, come close to the consecutive releases observed with examples 3, 4, and 7. Referring to examples 2 and 4, the same EO-only surfactant is used, but the amount used in example 4 is twice as much as that used in example 2. The number of releases obtained with the surfactant of example 4, however, is more than double (and it is non-linear), which was unexpected. Furthermore, comparing examples 6 and 7, each used a different EO-only surfactant that provided 0.0052 and 0.0058 moles EO/100 grams total polymer respectively. But example 7 provided more than 294 consecutive releases whereas example 6 provided less than half of the number of consecutive releases. Thus, per the examples in the specification, less than 0.0058 EO moles from surfactant/100g total polymer is insufficient—coming close (e.g. 0.0052) does not result in the unexpectedly high number of releases observed with examples 3, 4, and 7.

Taken together, it is submitted that Dempsey neither teaches nor suggests the claimed surfactant—e.g., a poly(dimethylsiloxane)polyoxyethylene surfactant having a high EO mole content and which is devoid of PO. For at least this reason, withdrawal of the ground of rejection is requested.

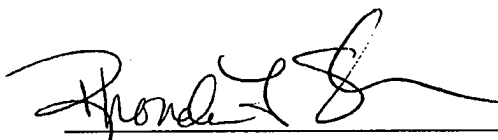
Additionally, in the Office action, the Examiner concedes that Dempsey fails to disclose the Applicants fatty acid component. It is respectfully submitted there was no suggestion from either Park or Mackey to modify Dempsey to use one of their fatty acid components. First, none of the cited art references come anywhere near providing the release results achieved by embodiments of the present invention. Second, neither Parks nor Mackey produced more releases that Dempsey did. Taken together, it is submitted that there was no reason for a skilled artisan to modify Dempsey and expect the results obtained by the Applicants. Under a similar analysis, the same is true with respect to Gillis. Simply, one of ordinary skill in the art, looking at the cited references alone or in combination, would have expected the results obtained by the Applicants. Thus, it is respectfully submitted that the Examiner has not established *prima facie* obviousness and the ground of rejection should be withdrawn.

Conclusion

This is intended as a full and complete response to the Office Action dated September 25, 2008. Please reconsider the claims pending in the application for reasons discussed below. Having addressed all issues set out in the Office Action, Applicant respectfully submits that the claims are in condition for allowance and respectfully requests that the application be passed to issue.

March 25, 2009
Date

Respectfully submitted,



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